



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No. : 10/758,241 Confirmation No. : 5324  
Applicant : Bernd SUNDERMANN, et al.  
Filed : January 16, 2004  
TC/A.U. : 1615  
Examiner : Unassigned  
Docket No. : 029310.53093US  
Customer No. : 23911  
Title : Substituted 4-Aminocyclohexanol Compounds

**INFORMATION DISCLOSURE STATEMENT  
UNDER 37 C.F.R. §§ 1.97 AND 1.98**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In accordance with the duty of disclosure under 37 C.F.R. § 1.56, Applicant hereby notifies the U.S. Patent and Trademark Office of the documents which are listed on the attached Form PTO-1449 and/or listed herein and which the Examiner may deem relevant to patentability of the claims of the above-identified application.

**STATEMENT OF RELEVANCE**

The relevance of these references to the subject matter of the present invention is given in the in the specification of the present invention.

English abstracts are submitted herewith for the references listed on the PTO 1449 as AB-AD.


Applicant encloses herewith a copy of a corresponding foreign Search Report citing the documents listed on the PTO 1449 as AA-AF, together with an

English-language version (if not already included) of that portion of the Search Report indicating the degree of relevance found by the foreign office.

The present Information Disclosure Statement is being filed (1) no later than three months from the application's filing date or (2) before the mailing date of the first Office Action on the merits (whichever is later), and therefore no certification under 37 C.F.R. § 1.97(e) or fee under 37 C.F.R. § 1.17(p) is required.

The submission of the listed documents is not intended as an admission that any such document constitutes prior art against the claims of the present application. Applicant does not waive any right to take any action that would be appropriate to antedate or otherwise remove any listed document as a competent reference against the claims of the present application.

Respectfully submitted,

  
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J. D. Evans  
Registration No. 26,269

August 31, 2004

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Substitute for form 1449A/PTO

# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 5

## Complete if Known

Application Number	10/758,241
Filing Date	January 16, 2004
First Named Inventor	Bernard SUNDERMANN
Art Unit	1615
Examiner Name	Unassigned
Attorney Docket Number	029310.53093US

## U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	Document Number Number-Kind Code <sup>2</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
/K.B./	AA	US- 4,346,101	08-24-1982	Daniel Lednicer	

## FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document Country Code <sup>3</sup> -Number <sup>4</sup> -Kind Code <sup>5</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
/K.B./	AB	DE 2839891	04-12-1979	The Upjohn Co.		AB
/K.B./	AC	DE 19963175	07-12-2001	Gruenthal GmbH		AB
/K.B./	AD	WO 01/12195	02-22-2001	Gruenthal GmbH		AB

## NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>7</sup>
/K.B./	AE	DANIEL LEDNICER ET AL., "4-(p-Bromophenyl)-4-(dimethylamino)-1-phenethylcyclohexanol, An Extremely Potent Representative of a New Analgesic Series", Journal of Medicinal Chemistry, October 1979, pp. 1157-1158, Vol. 22, No. 10, American Chemical Society	
/K.B./	AF	HIROSHI KAWAMOTO ET AL., "Synthesis of J-113397, the First Potent and Selective ORL1 Antagonist," Tetrahedron, 2001, pp. 981-986, 57, Elsevier Science Ltd.	
/K.B./	AG	DANIEL LEDNICER ET AL., "4-Aryl-4-aminocyclohexanones and Their Derivatives, a Novel Class of Analgesics," Journal of Medicinal Chemistry, 1981, pp. 341-346, Vol. 24, No. 3, American Chemical Society	
/K.B./	AH	DANIEL LEDNICER ET AL., "4-Amino-4-aryl-cyclohexanones and Their Derivatives: A Novel Class of Analgesics," Journal of Medicinal Chemistry, 1981, pp. 404-408, Vol. 24, No. 4, American Chemical Society	

Examiner Signature	/Kristie Brooks/	Date Considered	03/30/2008
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 1 Applicant's unique citation designation number (optional). 2 See Kind Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. 3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). 4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. 5 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. 6 Applicant is to place a check mark here if English language Translation is attached.

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Substitute for form 1449B/PTO  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)		<b>Complete if Known</b>	
		Application Number	10/758,241
		Filing Date	January 16, 2004
		First Named Inventor	Bernd SUNDERMANN
		Art Unit	1615
		Examiner Name	Unassigned
Sheet 2 of 5	Attorney Docket Number	029310.53093US	

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
/K.B./	AI	FAUD A. ABDULLA ET AL., "Axotomy Reduces the Effect of Analgesic Opioids Yet Increases the Effect of Nociceptin on Dorsal Root Ganglion Neurons," The Journal of Neuroscience, December 1, 1998, pp. 9685-9694, 18, 23, Society for Neuroscience	
	AJ	GIROLAMO CALO ET AL., "Pharmacology of Nociceptin and its Receptor: A Novel Therapeutic Target," British Journal of Pharmacology, 2000, pp. 1261-1283, 129, Macmillan Publishers Ltd.	
	AK	MARK CONNER ET AL., "The Effect of Nociceptin on Ca <sup>2+</sup> Channel Current and Intracellular Ca <sup>2+</sup> in the SH-SY5Y Human Neuroblastoma Cell Line", 1996, pp. 205-207, 118, Stockton Press	
	AL	E.S.L. FABER ET AL., "Depression of Glutamatergic Transmission by Nociceptin in the Neonatal Rat Hemisected Spinal Cord Preparation <i>In Vitro</i> ", Special Report, July 19, 1996, pp. 1-2,	
	AM	"Opioid and Opiate Receptors: Peptides and Knock-Out," Society for Neuroscience, 1998, p. 1358, Vol. 24	
	AN	FRANCOIS JENCK ET AL., "Orphanin FQ Acts as an Anxiolytic to Attenuate Behavioral Responses to Stress," Proc. Natl. Acad. Sci., December 1997, pp. 14854-14858, Vol. 94, USA	
	AO	MICHAEL A. KING ET AL., "Spinal Analgesic Activity of Orphanin FQ/Nociceptin and its Fragments", Neuroscience Letters, 1997, pp. 113-116, 223, Elsevier Science Ireland Ltd.	
	AP	TOSHIYA MANABE ET AL., "Facilitation of Long-Term Potentiation and Memory in Mice Lacking Nociceptin Receptors", Letters To Nature, August 6, 1998, pp. 577-581, Vol. 394, Macmillan Publishers Ltd.	
/K.B./	AQ	JEAN-CLAUDE MEUNIER ET AL., "Isolation and Structure of the Endogenous Agonist of Opioid Receptor-Like ORL <sub>1</sub> Receptor," Letters to Nature, October 12, 1995, pp. 532-535, Vol. 377	
Examiner Signature	/Kristie Brooks/		Date Considered 03/30/2008

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		Filing Date	January 16, 2004		
		First Named Inventor	Bernd SUNDERMANN		
		Art Unit	1615		
		Examiner Name	Unassigned		
Sheet	3	of	5	Attorney Docket Number	029310.53093US

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/K.B./	AR	J.S. MOGIL ET AL., "Orphanin FQ is a Functional Anti-Opioid Peptide", Neuroscience, 1996, pp. 333-337, Vol. 75, No. 2, Elsevier Science Ltd., Great Britain	
	AS	MIYUKI NISHI ET AL., "Unrestrained Nociceptive Response and Disregulation of Hearing Ability in Mice Lacking the Nociceptin/Orphanin FQ Receptor," The EMBO Journal, 1997, pp. 1858-1864, Vol. 16, No. 8, Oxford University Press	
	AT	RAINER K. REINSCHIED ET AL., "Orphanin FQ: A Neuropeptide That Activates an Opioidlike G Protein-Coupled Receptor," Science, November 3, 1995, pp. 792-794, Vol. 270	
	AU	CHRISTOPHER W. VAUGHAN ET AL., "Increase by the ORL <sub>1</sub> Receptor (Opioid Receptor-like,) Ligand, Nociceptin, of Inwardly Rectifying K Conductance in Dorsal Raphe Nucleus Neurons," Special Report, pp. 1609-1611	
	AV	TATSUO YAMAMOTO ET AL., "Effects of Intrathecally Administered Nociceptin, an Opioid Receptor-like, Receptor Agonist, and N-methyl-D-aspartate Receptor Antagonist on the Thermal Hyperalgesia Induced by Partial Sciatic Nerve Injury in the Rat," Anesthesiology, 1997, pp. 1145-1152, Vol. 87, No. 5, Lippincott-Raven Publishers	
	AW	ALI ARDATI ET AL., "Interaction of [ <sup>3</sup> H]Orphanin FQ and [ <sup>125</sup> I]-Tyr14-Orphanin FQ with the Orphanin FQ Receptor: Kinetics and Modulation by Cations and Guanine Nucleotides," Molecular Pharmacology, 1997, pp. 816-824, 51, The American Society for Pharmacology and Experimental Therapeutics	
	AX	HUNTER C. CHAMPION ET AL., "[Tyr <sup>1</sup> ]-Nociceptin, a Novel Nociceptin Analog, Decreases Systemic Arterial Pressure by a Naloxone-Insensitive Mechanism in the Rat," Biochemical and Biophysical Research Communications, 1997, pp. 309-312, 234, Academic Press	
/K.B./	AY	TRISTAN DARLAND ET AL., "Orphanin FQ/nociceptin: a Role in Pain and Analgesia, But So Much More," TINS, 1998, PP. 215-221, Vol. 21, No. 5, Elsevier Science Ltd.	

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/K.B./	AZ	BULENT GUMUSEL ET AL., "Nociceptin: An Endogenous Agonist for Central Opioid Like <sub>1</sub> (ORL <sub>1</sub> ) Receptors Possesses Systemic Vasorelaxant Properties," Life Sciences, 1997, pp. PL 141-145, Vol. 60, No. 8, Elsevier Science Inc., USA	
	BA	NAOKI HARA ET AL., "Characterization of Nociceptin Hyperalgesia and Allodynia in Conscious Mice," British Journal of Pharmacology, 1997, pp. 401-408, 121, Stockton Press	
	BB	DANIEL R. KAPUSTA ET AL., "Diuretic and Antinatriuretic Responses Produced by the Endogenous Opioid-Like Peptide, Nociceptin (Orphanin FQ)," Life Sciences, 1997, pp. PL 15-21, Vol. 60, No. 1, Elsevier Science Inc., USA	
	BC	FREDERIC KNOFLACH ET AL., "Modulation of Voltage-Gated Calcium Channels by Orphanin FQ in Freshly Dissociated Hippocampal Neurons," The Journal of Neuroscience, November 1, 1996, pp. 6657-6664, 16, 21, Society for Neuroscience	
	BD	HANS MATTHES ET AL., "Functional Selectivity of Orphanin FQ for Its Receptor Coexpressed with Potassium Channel Subunits in Xenopus laevis Oocytes," Molecular Pharmacology, 1996, pp. 447-450, 50, The American Society for Pharmacology and Experimental Therapeutics	
	BE	JEFFREY S. MOGIL ET AL., "Functional Antagonism of $\mu$ -, $\delta$ - and $\kappa$ -opioid Antinociception by Orphanin FQ," Neuroscience Letters, 1996, pp. 131-134, 214, Elsevier Science Ireland Ltd.	
	BF	CATHERINE MOLLEREAU ET AL., "ORL <sub>1</sub> , A Novel Members of the Opioids Receptor Family Cloning, Functional Expression and Localization," FEBS Letters, 1994, 341, Federation of European Biochemical Societies	
/K.B./	BG	JAMES D. POMONIS ET AL., "Orphanin FQ, Agonist of Orphan Opioid Receptor ORL <sub>1</sub> , Stimulates Feeding in Rats," NeuroReport, December 20, 1996, pp. 369-371, Vol. 8, No.1, Rapid Science Publishers	

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/K.B./	BI	XIAO-JUN XU ET AL., "Nociceptin or Antinociceptin: Potent Spinal Antinociceptive Effect of Orphanin FQ/ Nociceptin in the Rat," NeuroReport, September 2 1996, Vol. 17, No. 13, Rapid Science Publishers	
/K.B./	BJ	T. YAMAMOTO ET AL., "Analgesic Effect of Intrathecally Administered Nociceptin, an Opioid Receptor-Like <sub>1</sub> Receptor Agonist, in the Rat Formalin Test," Neuroscience, 1997, pp. 249-254, Vol. 81, Elsevier Science Ltd.	

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